can, by way of example, support a codeword of a (15,*k*) Reed-Solomon code, with the ability to detect $u=15-k$ symbol errors, or correct $t=[(15-k)/2]$ symbol errors. For example, if $k=7$ then $u=8$ and $t=4$.

1.2.4.3 Hexagonal Tag Design

Figure 48 shows a logical layout of a hexagonal tag **722** using the tag segment 712 of Figure 46, with six interleaved 2^4-ary (11,*k*) codewords. Figure 49 shows the macrodot layout of the hexagonal tag 722 of Figure 51. Figure 53 shows an arrangement 724 of seven abutting tags 722 of the design of Figure 48, with shared targets 17. The arrangement 724 shows that the hexagonal tag 722 can be used to tesselate a plane of arbitrary size.

1.2.4.4 Alternative Hexagonal Tag Design 1

Figure 51 shows the logical layout of an alternative hexagonal tag. This tag design is described in detail in the present applicants' co-pending US application USSN 10/409864 entitled "Orientation-Indicating Cyclic Position Codes".

The tag contains a 2^4-ary (6,1)cyclic position codeword $(0,5,6,9,A_{16},F_{16})$ which can be decoded at any of the six possible orientations of the tag to determine the actual orientation of the tag. Symbols which are part of the cyclic position codeword have a prefix of "R" and are numbered 0 to 5 in order of increasing significance, and are shown shaded in Figure 52.

The tag locally contains three complete codewords which are used to encode information unique to the tag. Each codeword is of a punctured 2^4-ary (9,5) Reed-Solomon code. The tag therefore encodes up to 60 bits of information unique to the tag. The tag also contains fragments of three codewords which are distributed across three adjacent tags and which are used to encode information common to a set of contiguous tags. Each codeword is of a punctured 2^4-ary (9,5) Reed-Solomon code. Any three adjacent tags therefore together encode up to 60 bits of information common to a set of contiguous tags.

The layout of the three complete codewords, distributed across three adjacent tags, is shown in Figure 53. In relation to these distributed codewords there are three types of tag. These are referred to as P, Q and R in order of increasing significance.

The P, Q and R tags are repeated in a continuous tiling of tags which guarantees the any set of three adjacent tags contains one tag of each type, and therefore contains a complete set of distributed codewords. The tag type, used to determine the registration of the distributed codewords with respect to a particular set of adjacent tags, is encoded in one of the local codewords of each tag.

1.2.4.4 Alternative Hexagonal Tag Design 2

Figure 54 shows the logical layout of another alternative hexagonal tag. ~~This tag design is described in detail in the present applicants' co-pending US application USSN __/_____ entitled "Symmetric Tags" (docket number NPT037US).~~

/JG/